UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Via Electronic and U.S. Postal Mail

January 26, 2012

Mr. Spence Leslie
Director, International Trade Compliance
Tyco Thermal Controls, Inc.
307 Constitutional Drive
Menlo Park, CA 94205

Re: Polychlorinated Biphenyls (PCBs) Under Toxic Substances Control Act – USEPA Region 9 Conditional Approval under 40 CFR 761.61(c) and – Sampling and Analysis Plan, Tyco Thermal Controls, LLC, 2201 Bay Road, Redwood City, California

Dear Mr. Leslie:

The U.S. Environmental Protection Agency Region 9 (USEPA) has reviewed the "Sampling and Analysis Plan, Tyco Thermal Controls, LLC" (SAP) dated February 2011 and prepared by AMEC Geomatrix for Tyco Thermal Controls, LLC (TTC). TTC submitted the SAP in response to the conditions of approval in USEPA's January 4, 2011 letter approving TTC's PCB Cleanup Notification and Work Plan.[1] USEPA is approving the SAP with the conditions established in this letter.

USEPA Conditions of Approval – TTC's February 2011 SAP

1. **Analytical Methods.** USEPA is requiring that Extraction Method 3540C (Soxhlet extraction) be used when analyzing the concrete samples. Method 3540C is a better extraction method for this matrix. In addition, USEPA strongly recommends the use of Soxhlet extraction for soil cleanup verification samples. This is also the PCB extraction method used in Method 1668C for PCB congeners. Sampling and analysis of dioxin-like PCB congeners will be conducted under this SAP.

2. **SAP Section 3.4.1 (Data Review and Validation) and 3.6.2 (Data Verification).** Data should be validated using USEPA's Contract Laboratory National Functional Guidelines for Level III and Level IV data validation. The analytical data for 10% of the total soil cleanup verification samples collected should be validated applying Level IV validation procedures. If major issues are found with the data then an additional 20% of the soil cleanup verification data must be conducted using Level IV data validation procedures.

   Field sample and laboratory quality control (QC) sample chromatograms, initial and continuing instrument calibrations, PCB Aroclor quantification methods (including PCB Aroclor pattern recognition and chromatogram peaks used in quantification of PCB Aroclors), and laboratory quantification report should at a minimum be part of the data review, validation, and verification.

[1] "PCB Cleanup Notification and Work Plan Tyco Thermal Controls 2201 Bay Road, Redwood City, California" dated June 14, 2010 and prepared by AMEC Geomatrix for Tyco Thermal Controls.

3. **SAP Sections 4.2 (Systematic Soil Sampling) and 4.3 (Additional Soil Assessment Sampling).** Soil samples should be proposed and collected in the parking lot area. Estimated locations for those samples can be determined by stepping out from the proposed soil boring sample locations B-108, B-109, B-110, and B-111.

4. **Section 4.4 (Concrete Sampling) and Figure 4 (Proposed Concrete Floor Sampling Locations).** USEPA is approving the concrete sampling approach with the conditions established herein and in accordance with 40 CFR 761.61(c).

   The concrete floor is coated with a sealant or paint containing PCBs. If that coating is not removed before collecting the concrete samples, the PCB analysis results will not discriminate between PCBs in the concrete and the coating. USEPA will assume the concrete contains PCBs at the levels measured via analysis. Concrete samples must be collected following the attached USEPA Region 1 SOP for sampling of porous surfaces.

   In areas where the concrete is coated with paint or sealant, TTC may consider collecting a concrete core to the maximum depth of the concrete slab and analyzing the bottom 0.5 inches from that core to determine if PCBs are present and the need for soil samples beneath the concrete.

   After receiving the concrete laboratory analysis results, TTC must immediately confer with USEPA to determine if collection of soil samples beneath the concrete slab is necessary.

   If concrete samples show detections of PCBs above the cleanup level, soil samples must be collected beneath the location where the concrete sample exceeded the PCB cleanup level and if a soil sample was not previously collected in that location.

   At a minimum, soil samples at 0 to 3 inches below the concrete/soil interface should be collected. In addition, if the new collected soil samples indicate that PCBs are present above the cleanup level, TTC must collect additional soil samples stepping in all directions from that soil sample using a tighter sampling grid of 400 square foot. And this process must be repeated until soil samples show PCBs are present at or below the cleanup level. The step out soil samples can be collected before removing the concrete.

5. **Section 4.5 (Post-Excavation Verification Soil Sampling) and Figures 5, 6A, 6B, 6C, 7A, 7B, and 8.** TTC proposes collection of composite soil samples (up to 9 aliquots per composite) to verify the PCB cleanup level has been achieved. USEPA is modifying the proposed sample compositing approach by allowing a maximum of 4 aliquots per composite sample. The analysis results for each composite should be compared separately to the composite cleanup level calculated for each

composite. The composite cleanup level is calculated by dividing the 0.74 mg/kg by the maximum number of aliquots in each composite.

TTC must collect discrete soil samples from the excavation sidewalls for analysis of dioxin-like PCB congeners via Method 1668C. Soil samples for PCB-congener analysis must be collected from those locations where soil characterization samples have the highest total PCB Aroclor concentrations. We recommend that soil samples for PCB congener analysis be collected from each excavation. Ten percent of the total number of soil cleanup verification samples must be collected for analysis of dioxin-like PCB congeners.

This condition modifies the number of composite samples that will be collected from the excavations and such modification may increase the number of samples to be collected for PCB congener analysis. TTC and USEPA should discuss this issue further if TTC has concerns with a potential increase in the number of samples to be collected for analysis of dioxin-like PCB congeners.

6. **Section 6.3 (Pre-Excavation Confirmation, Systematic, and Additional Assessment Soil Sampling).** If visual evidence (e.g., staining, discoloration, oily matrix) and/or odors are noticed in exposed soils, at a minimum soil samples must be collected at 0 to 3 inches below the surface of the exposed soils and analyzed for PCBs.

7. **Section 6.5 (Post Excavation Verification Soil Sampling).** For the 8-foot deep excavations, TTC proposes to collect soils with a backhoe bucket and then collect the discrete (sidewalls and bottom) samples from the soil in the bucket. The backhoe bucket must collect soil from the surface of the bottom of the excavation with minimum disturbance and only in an amount sufficient for a discrete sample so that dilution of the surface soils at the bottom of the excavation is minimized. The bucket must be decontaminated following the decontamination procedures in 40 CFR761.79(c).

8. **Section 6.6 (Decontamination Procedures).** Sampling tools used in collecting concrete samples must be decontaminated using the methods described in the attached USEPA Region 1 SOP. Records of decontamination conducted following 40 CFR 761.61(c)(2)(i) must be maintained in accordance with 40 CFR 761.79(f)(2). Decontamination must be conducted in a manner that does not result in further contamination as required in 40 CFR 761.79(e). Decontamination fluids must be disposed of based on their original PCB concentration in accordance with the requirements in 40 CFR 761.79(g).

9. **Section 8.0 (Disposal of Residual Materials).** TTC must modify Section 8.0 of the SAP and submit that modification within 14 days after the date of this approval letter. The modifications to that Section must be consistent with the waste management and disposal requirements in 40 CFR 761.61(a)(5)(i)(B), (a)(5)(ii), (a)(5)(iii), and (a)(5)(iv).

10. Sections 9.1 (Field Notes) and 11.0 (Field Variances). TTC must notify USEPA of any deviations to the approved SAP before its implementation.

11. Sections 10.1 (Field Quality Control Samples) and 10.1.2 (Assessment of Field Variability (Field Duplicates)). One soil duplicate sample must be collected for every ten soil cleanup verification samples.

12. Figure depicting new additional soil sampling locations. Within 14 days after the date of this approval letter, please submit a figure depicting the locations for the new additional soil sampling locations and additional soil samples required in Condition 3 of this approval.

13. Barrier for PCB soils in the northern boundary of the property. Within 30 days before completion of the PCB cleanup, TTC must submit a drawing to scale depicting the location and depth of the geotextile barrier that will be installed in the northern boundary of the TTC property. In addition, survey coordinates should be provided for the location of the barrier.

Although not addressed in the SAP, we understand that TTC is considering recycling of concrete with PCBs below 0.74 mg/kg that may be available from the demolition of the 72,000-square-foot building slab. USEPA will address this matter in a separate letter.

On January 25, 2012 we discussed with your consultant AMEC Geomatrix most of the issues addressed in the conditions of approval. Condition 5 requires a different approach for preparation of soil composite samples that was not discussed with AMEC Geomatrix. In addition, in reference to the cleanup level for the site, which is based on PCB Aroclors, that cleanup level may be modified based on the concentration of dioxin-like PCB congeners that may be present in soil samples from the excavations. If you have questions concerning this paragraph or the conditions of approval, please call Carmen D. Santos at 415.972.3360. Thank you.

Sincerely,

Arlene Kabei
Associate Director
Waste Management Division

Enclosures (1)

Cc: Katherine (Peggy) Peishl, AMEC Geomatrix, Inc.
David Barr, RWQCB